

II. CLAIM AMENDMENTS

1. (Cancelled)
2. (Currently Amended) A method according to claim ‡14, comprising the step of generating a pseudorandom bit sequence at the mobile station in order to produce the known form of the test signal.
3. (Currently Amended) A method according to claim ‡14, wherein the step of producing and temporarily storing information about errors detected in the received test signal during the comparing step comprises the step of producing and temporarily storing information about thea detected bit error ratio of the received signal, and the step of sending in the uplink direction a signal representing the stored information about errors comprises the step of sending in the uplink direction a signal representing the detected bit error ratio.
4. (Currently Amended) A method according to claim ‡14, wherein the step of producing and temporarily storing information about errors detected in the received test signal during the comparing step comprises the step of producing and temporarily storing information about thea frame erasure ratio of the received signal, and the step of sending in the uplink direction a signal representing the stored information about errors comprises the

step of sending in the uplink direction a signal representing the detected frame erasure ratio.

5. (Currently Amended) A method according to claim ‡14, comprising the steps of:

receiving a command of a certain first protocol level in the downlink direction, and

in response to the received command, setting the mobile station into a test mode where no notification about an established bi-directional communication link is sent to protocol levels higher than said first protocol level.

6. (Original) A method according to claim 5, wherein said first protocol level is a Layer 3 RR level.

7. (Currently Amended) A method according to claim ‡14 wherein, in a mobile station equipped for converting a downlink signal to baseband and for demodulating, decrypting and channel decoding the signal converted to baseband, the step of comparing the received test signal to a known form of the test signal is performed after demodulation and decryption but prior to channel decoding.

8. (Currently Amended) A method according to claim ‡14 wherein, in a mobile station equipped for converting a downlink signal to baseband and for demodulating, decrypting and channel decoding the signal converted to baseband, the step of comparing the

received test signal to a known form of the test signal is performed after demodulation, decryption and channel decoding.

9-12. (Cancelled)

13. (Currently Amended) A method according to claim 1214, comprising the steps of:

sending a test signal from a large number of base stations to a large number of mobile stations,

receiving information sent by a large number of mobile stations at a large number of base stations,

storing the information received by the base stations at a control station of the cellular radio system, and

producing, at the control station, information representing the quality of downlink data communication in the cellular radio system.

14. (Currently Amended) A method according to claim 12, wherein for measuring the general quality of data transmission in a cellular radio system comprising base stations and mobile stations it comprises the steps of A method for testing the functioning of downlink data communication in a cellular radio system, comprising the steps of:

sending a test signal from a base station to at least one mobile station,

receiving the test signal sent by the base station at a mobile station,

comparing the test signal received at the mobile station to a known form of the test signal,

producing and temporarily storing at the mobile station information about errors which were detected in the received test signal during the comparing step,

sending information representing the stored information about errors from the mobile station to a base station,

receiving the information sent by the mobile station at a base station,

storing in the cellular radio system the information received by the base station,

a) generating a test signal, which is a pilot signal, and which is transmitted, via a base station of the cellular radio system, to a mobile station of said the cellular radio system,

b) generating and storing at the mobile station information describing the occurrence of errors in the test signal received by the mobile station,

c) transmitting from the mobile station to the base station a first error message describing the occurrence of errors within a given block of data of the test signal received by the mobile station, and

d) transmitting from the base station to a certain control unit a second error message describing the first error message received from the mobile station of the cellular radio system.

15. (Cancelled)

16. (Currently Amended) A method for testing the functioning of downlink data communication in a cellular radio system, comprising the steps of:

sending a test signal from a base station to at least one mobile station,

receiving the test signal sent by the base station at a mobile station,

comparing the test signal received at the mobile station to a known form of the test signal,

producing and temporarily storing at the mobile station information about errors which were detected in the received test signal during the comparing step,

sending information representing the stored information about errors from the mobile station to a base station,

receiving the information sent by the mobile station at a base station,

storing in the cellular radio system the information received by the base station,

~~A method according to claim 14, wherein at step a), there is generated generating a test signal which also is a synchronization sequence in a downlink burst transmitted by the base station and which is transmitted, via a base station of the cellular radio system, to a mobile station of the cellular radio system,~~

generating and storing at the mobile station information describing the occurrence of errors in the test signal received by the mobile station,

transmitting from the mobile station to the base station a first error message describing the occurrence of errors within a given block of data of the test signal received by the mobile station, and

transmitting from the base station to a certain control unit a second error message describing the first error message received from the mobile station of the cellular radio system.

17. (Currently Amended) A method according to claim 14, further comprising, during the step of generating the test signal wherein at step a), there is generated generating a pseudorandom bit sequence.

18. (Currently Amended) A method according to claim 17, further comprising the steps of:

generating at the mobile station the same pseudorandom bit sequence that was generated during the step of generating the test signal, at step a) and

comparing at the mobile station the self-generated pseudorandom bit sequence with the received test signal.

19. (Currently Amended) A method for testing the functioning of downlink data communication in a cellular radio system, comprising the steps of:

sending a test signal from a base station to at least one mobile station,

receiving the test signal sent by the base station at a mobile station,

comparing the test signal received at the mobile station to a known form of the test signal,

producing and temporarily storing at the mobile station information about errors which were detected in the received test signal during the comparing step,

sending information representing the stored information about errors from the mobile station to a base station,

receiving the information sent by the mobile station at a base station,

storing in the cellular radio system the information received by the base station,

generating a test signal which is transmitted, via a base station of the cellular radio system, to a mobile station of the cellular radio system,

generating and storing at the mobile station information describing the occurrence of errors in the test signal received by the mobile station,

transmitting from the mobile station to the base station a first error message describing the occurrence of errors within a given block of data of the test signal received by the mobile station~~A method according to claim 14, wherein at step e), from the mobile station there also is transmitted to the base station~~and a first location message describing the location of the mobile station, and

transmitting from the base station to a certain control unit a second error message describing the first error message received from the mobile station of the cellular radio system.

20. (Currently Amended) A method according to claim 19, wherein during the step of transmitting the first error message from the mobile station to the base station~~at step e)~~, there is transmitted from the mobile station to the base station a location update message.

21. (Currently Amended) A method according to claim 14, wherein ~~at step e)~~when transmitting from the mobile station to the base station the first error message, from the mobile station there is

transmitted to the base station the value of the average bit error ratio or frame erasure ratio within a given block of data as detected by the mobile station.

22. (Currently Amended) A method according to claim 14, wherein
~~at step d} when transmitting from the base station to the certain~~
~~control unit the second error message,~~ the data received from the mobile station is transmitted as such to the control unit.

23. (Currently Amended) A method according to claim 14, wherein
~~at step d} when transmitting from the base station to the certain~~
~~control unit the second error message,~~ a parameter describing ~~the~~ location of the mobile station is also transmitted to the control unit.

24-26. (Cancelled)

27. (Currently Amended) A system for measuring the general quality of data transmission in a cellular radio system, said system comprising a base station subsystem and a mobile station, comprising:

in the base station subsystem, means for generating a test signal and for transmitting it via a base station of the cellular radio system to the mobile station of the cellular radio system,

in the mobile station, means for generating and storing data describing the occurrence of errors in the test signal received by the mobile station,

in the mobile station means for transmitting a first error message to the base station subsystem, said first error message describing the occurrence of errors in a certain block of data in the test signal received by the mobile station, and

a control unit for collecting such error data that describes the error messages received by the base station subsystem of the cellular radio system from the mobile stations; and

in the base station subsystem means for generating data describing a location and for transmitting said data to the control unit.

28. (Original) A system according to claim 27, comprising in the base station subsystem and in the mobile station means for generating the same pseudorandom bit sequence, and in the mobile station means for comparing the pseudorandom bit sequence generated by the mobile station with the pseudorandom bit sequence received from the base station subsystem.

29. (Currently Amended) A system according to claim 27, comprising in the mobile station means for generating data describing thea location of the mobile station and for transmitting said data to the base station subsystem together with the first error message.

30. (Cancelled)

31. (New) A method according to claim 16, further comprising during the step of generating the test signal, of generating a pseudorandom bit sequence.

32. (New) A method according to claim 16, further comprising the steps of:

generating at the mobile station the same pseudorandom bit sequence that was generated during the step of generating the test signal, and

comparing at the mobile station the self-generated pseudorandom bit sequence with the received test signal.